oadband Task Force
Act 2, Session Laws of Hawai`i 2007)
State of Hawai`i
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Minutes of Meeting

The agenda for this meeting was filed with the Office of the Lieutenant Governor, as required by Section 92-7(b), Hawai`i Revised Statutes.

Date: Thursday, January 31, 2008

Time: 1:30 p.m.

Place: Bankerôs Club Board Room
First Hawaiian Bank Center, 30th Floor
999 Bishop Street
Honolulu, Hawaii

Present: Chair David Lassner, University of Hawai`i
Gordon Bruce, City & County of Honolulu
Gary Caulfield, First Hawaiian Bank
Senator Will Espero, The Senate
Senator Carol Fukunaga, The Senate
Jennifer Goto Sabas, Office of Senator Daniel K. Inouye
Senator David Ige, The Senate
Clyde Sonobe, Department of Commerce & Consumer Affairs
Representative Gene Ward, House of Representatives

Sterling Yee, Assistant Auditor, Office of the Auditor
Jayna Oshiro, Special Projects Coordinator, Office of the Auditor
Stephen Wilson, Senior Analyst, Office of the Auditor
Pat Mukai, Secretary, Office of the Auditor

Robert Doeringer, RHD Consulting, LLC
Burt Lum, Hawaiian Telcom
Marlon Wedemeyer, HENC
Kiman Wong, Oceanic Time Warner Cable
Jen Sudick, Star Bulletin

Excused/ Absent: Joel Matsunaga, Hawaiian Telcom
Representative Marcus Oshiro, House of Representatives
Henk Rogers, BluePlanet Wireless
Nate Smith, Oceanic Time Warner
Vice Chair Nam Vu, ShakaNet, Inc.
Representative Kyle Yamashita, House of Representatives

Call to Order: Since quorum was not established at this time, Senator Fukunaga convened the meeting of Why Broadband Matters Working Group at 1:35 p.m.

Presentation: Tim Bajarin, President of Creative Strategies, did a presentation to the task force. The following is a summary of his presentation.

Mr. Bajarin started with the company in 1981. He stated that the company is traditionally coming from a market research background that started in 1969. The first project was

with Apple. Because he has been at the start of all of these
e to see the next generational technology trends.

Mr. Bajarin shared what is being called the cutting age of digital connecting device. This is the technology that will drive the demand for high-speed broadband. In 1995, there were only about 500 million digital consumers. Today, we are pretty close to almost 3 billion by 2010. When you actually add computers, cell phones, smart phones and all other digital devices out there, we are getting closer to 3 billion devices rapidly and this is going to drive a real market for connected devices. Another issue that is very interesting from Silicon Valleyôs standpoint is they sell approximately 300 million PCs a year. In Silicon Valley, they see another new opportunity and they are now anticipating the next generation of computers that can build an emerging market for another 300 million PCs by 2012. They believe there will be a lot of new people emerging who will begin using personal computers in countries like not only Russia but Africa, South America, China, etc. By 2010, there will be about 1.8 billion connected devices sold annually. If you look at the actual numbers, with actual worldwide technology, the worldwide expense today is $1.2 trillion in U.S. dollars and this is going up.

Research is broken down into 4 demographics (basically the current generations):

1. Silver Surfersð 1909-1945ð 55 million
2. Baby Boomersð 1946-1964ð 77 million
3. Generation Xð 1965-1978ð 49 million
4. Millenialsð 1979-1990ð 80 million

If you look at 80 million Millenials, technology is integrated into their lifestyle. Collaboration both at the business and consumer level is going to be one of the most important driving forces for broadband going forward. 96% of U.S. homes have Internet connectivity but only about 60% have broadband. While this is continuing to grow, the problem with the term is the definition of broadband. Broadband in Silicon Valley is 6 megabit. The good news is more and more telephone and cable companies are working hard to integrate the next generation of technology into their back-end and hoping to get 50-100-150 megabit in the next 3 to 5 years. Top 25 countries have 50-90% broadband penetration; USA/Canada about 50%; Japan approximately 60%; and China 6%.

Three key components in wireless networks:

1. WiFi - local area network architecture.
2. WiMax ï this is a big question mark as far as long-term broadband capabilities. By the end of 2008, Intel will include WiMax radio in every chip they sell in a mobile computer. The assumption is we can have tens of millions of laptops that are WiMax ready by 2009. The big problem today, the only two companies (Clearwire and Sprint), push the WiMax architecture. The biggest concern for a state like Hawai`i and some of the smaller states is getting WiMax provider to ensure they actually consider you as part of build-out.
3. 3G and 4G cellular ï most of the major big cellular companies are not going to buy WiMax. Verizon clearly stated they are staying with LTE, the next generation of their architecture as well as AT &T. Again, the question is getting them to support Hawai`i as they do their build-out.

Research ï business and consumer users ï if you give the mentality of ñAlways Connected,ò the expectations change and that is where we are going. Generation Y and Millenials, will require digital lifestyle not only for government but for schools. Educational facilities and work places have to get this engrained in their thinking because that is the norm for the younger generation.

The senior generation is becoming more computer literate. They are using the computers

riends, children, and grandchildren. With baby boomers, they n they began using the computers to search for things close to X fundamentally used computers only if it actually made their lifestyles easier. Whereas Generation Y (Millenials), accept the fact this is the way it is. So, with all of these generations, if they can get connected anytime, any place, then they should have access to all of these ñinformation, communication, entertainment, etc.ò To be connected in the digital age means being connected to the Internet and to other people and would like to underline this statement because this is actually a cornerstone of broadband strategy.

What is becoming much more important is the rule of using technology to allow you to connect to other people. When we talk about the meaning of being connected and providing high-speed connection to this audience, you need to make sure you understand that it is not just connection to the Internet but to people as well. Technology is the key to digital lifestyle.

Listed are some of the trends-portable media devices:

1. iPods ï 150 million installed base, with about 50 million annually through 2008.
2. MP3 players ï 10-12 million
3. MID (Mobile Internet Device)

The MID is being emphasized because this is the product Intel will push very hard. The basic premise is they are going to give you ability to put the Internet in our pockets. Intel wants to sell hundreds of millions of MIDs in the next 5-10 years. And, this is a very big issue because what might happen is the role of generic cell phone might change. It may go back to what it was in the early days as strictly voice only and it would only be carried with you for emergencies. For a device like the MID, it might be a complete communication, information, and entertainment device and you would have to carry both the cell phone and MID with you. Research actually supports this. An example is the iPhone and this device is pretty good because it has all the music and video. The only problem is, if you play music and play video, the battery dies. This is what they found with kids. Kids were very reluctant to use this device to consume aggressively music and video because in the end, the most important demand was the voice and text messaging. The real trend is to have the entire internet experience on a device that fits in your pocket and goes with you everywhere.

A device that is really important is the digital camera. 111 million are sold worldwide annually. Another important device is the smart phones such as Blackberry or the iPhone. The smart phone is defined as having an operating system and the capability of having application software. The majority of the phones out there today, are not anywhere nearly as smart as Palm Trio, Windows Mobile, Blackberry or iPhone. The belief is the growth in smart phones will be dramatic. The demand is going to be very, very high for high speed Internet and communications. Another trend is from taking PC connectivity and moving it to the living room with a device called media extenders.

The one product that has gotten passed the computer industry as the key media in the home communication was the console gaming system such as the Nintendo Wii and Playstation. These devices are now starting to become ósmart.ô If you look at the new version of X-Box 360, it is a media extender. It will communicate with your PC and bring the content over to the television. Apple is doing the same thing with their new Apple TV even though it is not a gaming system. Sony is doing the same thing with their Playstation. The next generation is the Nintendo Wii that will serve as a media extender as well. So, this all becomes a part of digital homes. In a connected environment, all devices connect to the Internet and to each other. These devices will deliver various types of content via wired and wireless connections.

w of the actual way we will see technology over the next 3 ï 5
eens in a digital lifestyle (customer touch points): 1) PC; 2) TV;
bout these screens in your own life. Your PC is your one internet connected device, it is your lifeline to information, education, communication, etc. But the TV is becoming just as important as a part of one the screens. If you look at what Sony, Samsung, and HP are doing, they all have what is called the smart TV. They are bringing the intelligence and putting it there to give you direct connection to the internet. This evolves into what is called, digital ecosystem.

Touchpoint screens represent the following: 1) access; 2) viewing; 3) distribution; and 4) control of content. They all become the center of everyoneôs lives. We have other screens in our lives, the fourth screen, for example, PSP, MIDs, etc. The fifth screen represents the navigation in your car that will become more intelligent. The Magellan Navigation has a cell phone chip in the device in which you can get weather reports and traffic signals.

Another screen that is emerging is the digital photo frame which turns into a smart device. It will put not only WiFi connection but an operating system as well as cellular connection. If you turn on any of these digital devices and make it smart, it could be the portable information system for the house. You can take it off the refrigerator, take it into your living room, sit on the couch and surf the web. If you connect your device to a Slingbox, you could take it outside by the pool and watch television.

This is the big question to come out from Silicon Valley, what if I make this device smart? What does it do? What if I put a wireless chip, add a operating system and smart phone, all of a sudden, things start changing as far as usability and this is whatôs driving things today. More and more of the technology that exists today will become intelligent and it becomes part of our digital ecosystem. This is the ecosystem we are going to have the next 2-3 years.

The next level is where broadband becomes critical. We are still clearly living in a PC centric model ï Dell, HP, etc. We are trying to make these smarter. The cloud model is starting to show up a lot sooner than may expect. The belief is Microsoft and IBM are going to flush out the cloud model in the next 3 years with actual applications. We can start looking at this issue as the blueprint for the next generation of broadband.

Highlights:

- There will be 3 billion connected consumers on the horizon.
- Each consumer will have at least one connected device and others may have even more than one.
- All devices will be part of each individualôs digital ecosystem.
- Digital televisions, set top boxes, camera phones, mobile media devices will drive double digit growth in the CE market for the next 5 years. But at some point when the economy turns around, digital technology will continue going up. So, you may have a dip here and there, but in reality, we expect this to be stronger to grow.

At some point, telemedicine becomes a reality and it becomes a cornerstone of the next generation of architectures. Some other aspects that are important are telecommuting, video-conferencing, and distance learning.

The last aspect which is really big because of Generation Y is gaming and 3-D social networks. For example, Second Life is a 3-D like environment for social networking. IBM uses this to communicate with their customers. What is being expected is the next generation of 3-D versions being applied not only to gaming but to social networks.

Discussion: Member Bruce asked about issues relating to public safety. He mentioned he just came

y deployed over 4,000 wireless cameras on every corner of the
n any huge growth in the public safety side in the use of
plied they donôt address public safety issues because in their work, they look at business and the consumer. There was a project related to that for one of the big cities about 2 years ago that was very high on the radar, especially cameras. It is suspected that this will become more and more of an issue. Mr. Bruce said they did a pilot project in a couple of communities and the crime rate dropped severely that they could not launch an attack against it. Chicago has on record that the ACLU is in favor for this plan.

Representative Ward asked about MIDs ï when is it coming out, and how much does it cost. Mr. Bajarin answered, the first generation of MIDs are on the market today and they cost about $699 to $899 and that of course is way too high for the consumer market. Intelôs goal is to have it at $399 to $499 by 2009. Nine companies are backing this today, but unfortunately, it is going to take one of the big companies to do it. One potential company that could mess it up for everyone is Apple. For example if they decide to produce an iPhone with a 5òscreen and put it out like the iPod touch. An interesting aspect of the iPod touch is adding applications to it, for example, notes, calendars, maps, etc. There is a big sense in Silicon Valley that Appleôs next big shoe to drop is going to be in this MID category.

Mr. Bajarin did an overview of the way things are being seen, where they are going, and the fact that we are moving to billions of connected devices. If you think about our broadband question in that context, it becomes clear thinking how a road map might look like because the reality is, the constituents want to have access to any other content, any information, any time, at any place. The younger the generation wants it now.

The California Task Force has 7 recommended key actions:

1. Build high-speed broadband infrastructure.
2. Develop a model permitting and encouraging collaboration among providers. Also, to develop public/private partnership between local government and broadband providers to endorse community standards will improve the speed when broadband is deployed.
3. Increase the use and adoption of broadband and computer technology. They wanted to use this in government messaging in ways to show Californians to access, use and learn broadband at home and in communities and provide the foundation for a digitally literate society that is able to fully benefit from broadband technology. They will actually create a campaign that shows people how to go in and promote the use of broadband technology.
4. Engage and reward broadband innovation and research ï promoting innovative uses of broadband technology and encouraging wider e-government use will result in quality-of-life improvements while increasing demand for a robust broadband infrastructure.
5. Create a statewide e-health network ï part of it is led by work done at Stanford, Berkeley and one of the Cal-Techs. They believe they need to have a much better handle on quality of care. Telemedicine is on top for broadband because it is not just diagnosis, it has to do with actual remote surgeries and it takes the entire process for broadband.
6. Leverage educational opportunities to increase broadband use ï ensuring high-capacity broadband connections coupled with a robust technology support with relevant curriculum; literacy standards; and off-campus educational partnerships to provide California students with skills they need to compete in a 21st century economy. They have made the use of broadband critical to the education system and driving a lot of initiatives in that direction.
7. Continue state level and statewide leadership.

s extremely interested in our success.

uring Mr. Bajarin's presentation.

Chair's Report:

Minutes of previous meeting

Member Caulfield moved to approve the minutes of the December 13, 2007 meeting, seconded by Senator Fukunaga. The motion was unanimously carried.

Other

Chair Lassner stated that the task force may be looking at shifting the standing meetings to mornings. It may not be formal meetings of the task force. However, the task force may be able to accomplish everything through the working groups. Senator Fukunaga's working group has been putting together information briefings in functional areas such as public safety, health, and education.

Chair Lassner reported that there is a bill in both House and Senate to extend our funding for one more year. Based on the estimates from Connect Kentucky, we penciled the estimate as being about $300,000 to do the types of maps they did as survey data. If funding is approved, a vendor will be selected.

Adjournment: With no further business to discuss, the Chair adjourned the meeting at 2:35 p.m.

Reviewed and approved by:

Sterling Yee
Assistant Auditor

February 19, 2008

[ ] Approved as circulated.

[ ] Approved with corrections; see minutes of _____ meeting.

Broadband01/31/08